



W E S E

WAVE ENERGY
IN SOUTHERN EUROPE

D4.4

Guidance for a risk based and adaptive management consenting of wave energy projects in Spain and Portugal



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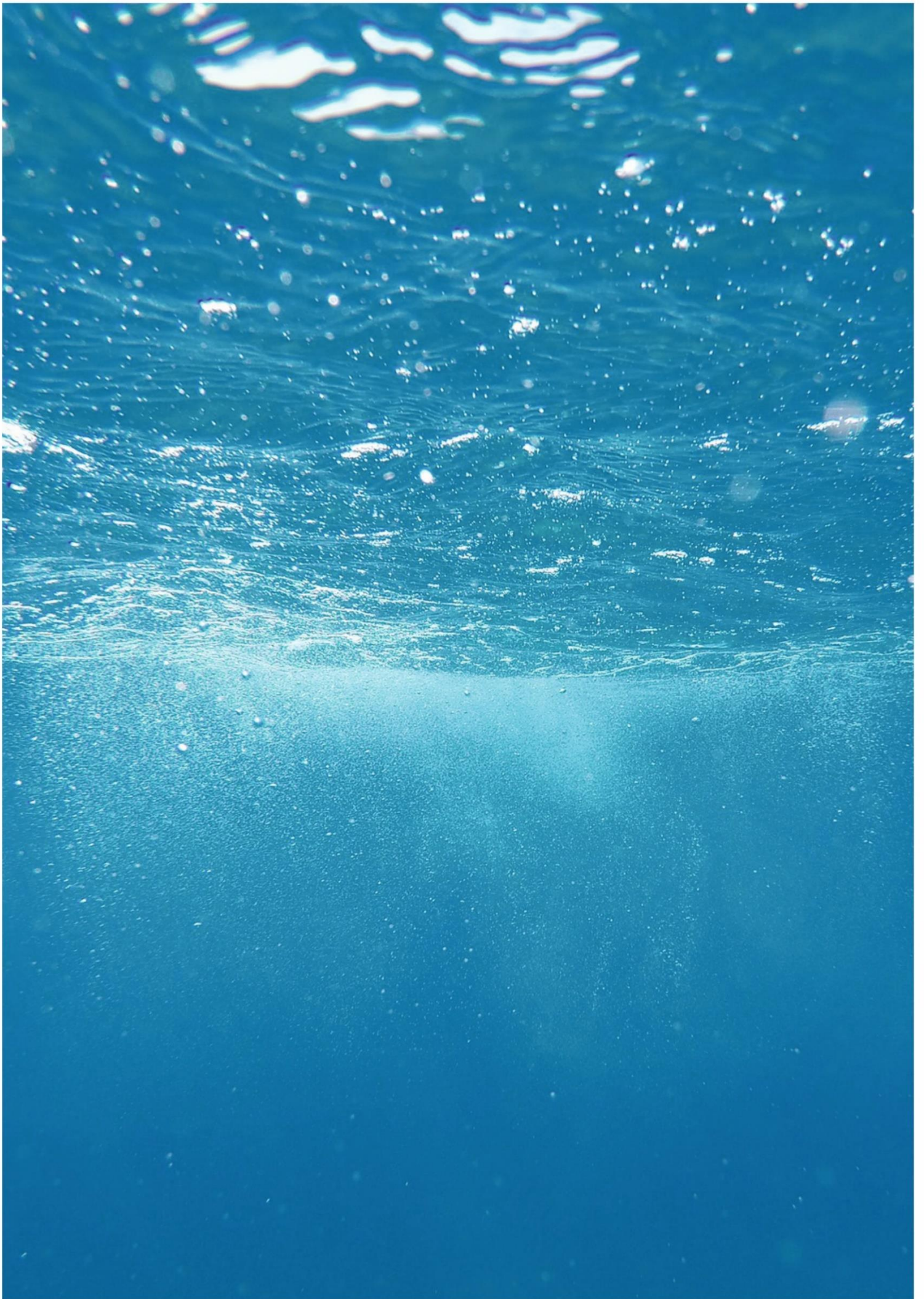


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WP 4

Deliverable 4.4 Guidance for a risk based and adaptive management consenting of wave energy projects in Spain and Portugal

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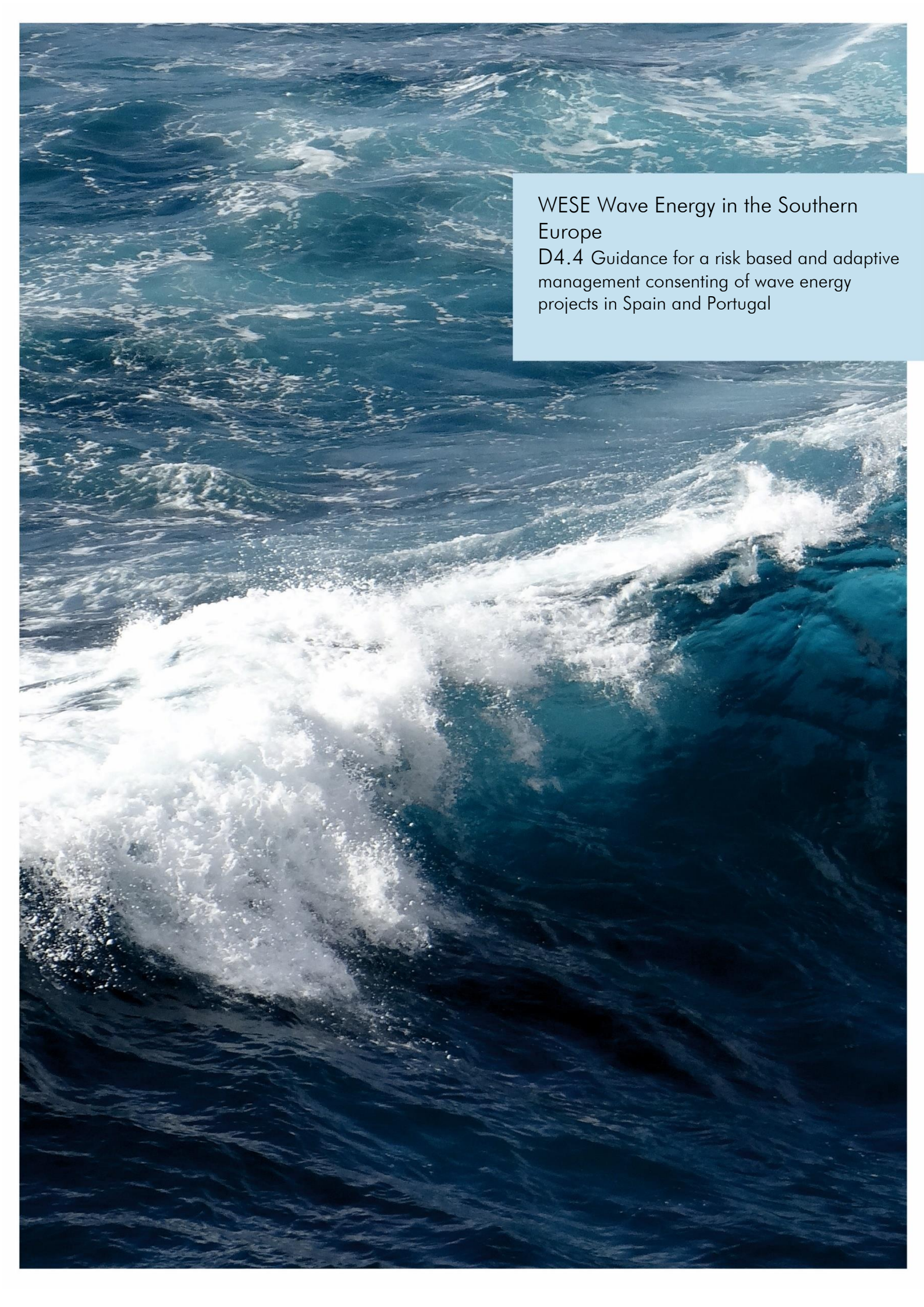
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An aerial photograph of a boat's wake in the ocean. The water is a deep, vibrant blue, and the wake is a turbulent, white, frothy trail of water that curves from the bottom left towards the top right. The texture of the water is highly detailed, showing small ripples and larger waves. A semi-transparent light blue rectangular box is overlaid on the upper right portion of the image, containing white text.

WESE Wave Energy in the Southern
Europe

D4.4 Guidance for a risk based and adaptive
management consenting of wave energy
projects in Spain and Portugal

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1. ABBREVIATIONS AND ACRONYMS

AA	Administrative Authorisation
AlncA	Environmental Appraisal
APA	Environmental Portuguese Agency
CCDR	Commission of Coordination and Regional Development
DCAPE	Decision on the Environmental Compliance of the Detailed project design
DGEG	Directorate-General of Energy and Geology
DGEPM	Directorate General for Energy Policy and Mines
DGEQA	Directorate General for Environmental Quality and Assessment
DGPC	Directorate-General of Heritage and Culture
DGRM	Directorate-General of Natural Resources, Safety and Maritime Services
DGSCS	Directorate General for Sustainability of the Coast and the Sea
DIA	Environmental Impact Statement
DInCA	Environmental Appraisal Statement
DST	Decision Support Tools
EA	Exploitation Authorisation
EIA	Environmental Impact Assessment
EIS	Environmental impact study
EISt	Environmental Impact Statement
EMN	National Maritime Space
FIT	Feed-In Tariff
ICNF	Institute for the Conservation of Nature
ICT	Information and Communications Technologies
ISD	Initial strategic document
METDC	Ministry for Ecological Transition and Demographic Challenge
MRE	Marine Renewable Energy
MSP	Marine Spatial Planning
MTPD	Maritime-terrestrial public domain
PA	Port Authority
PEA	Project Execution Approval
PNIEC	Integrated National Plan for Energy and Climate
PNNL	Pacific Northwest National Laboratory
PSOEM	Maritime Spatial Planning Plan
REN	National Ecological Reserve
RES	Renewable Energy Sources
RESP	Public Service Energy Network
RiCORE	Risk Based Consenting of Offshore Renewable Energy Project
RJAIA	Legal System of the Environmental Impact Assessment

SDM	Survey, Deploy & Monitor
SEA	Strategic Environmental Assessment
SER	Strategic Environmental Report
SES	Strategic environmental study
SESt	Strategic environmental statement
TUPEM	Title for the Private Spatial Use for the EMN
TUHR	Title for the Use of Water Resources
WE	Wave Energy
WEC	Wave Energy Converter
WP	Work Package

2. WESE project synopsis

The Atlantic seaboard offers a vast marine renewable energy (MRE) resource which is still far from being exploited. These resources include offshore wind, wave and tidal. This industrial activity holds considerable potential for enhancing the diversity of energy sources, reducing greenhouse gas emissions and stimulating and diversifying the economies of coastal communities. Therefore, the ocean energy development is one of the main pillars of the EU Blue Growth strategy. While the technological development of devices is growing fast, their potential environmental effects are not well-known. In a new industry like MRE, and Wave Energy (WE) in particular, there may be interactions between devices and marine organisms or habitats that regulators or stakeholders perceive as risky. In many instances, this perception of risk is due to the high degree of uncertainty that results from a paucity of data collected in the ocean. However, the possibility of real risk to marine organisms or habitats cannot be ignored; the lack of data continues to confound our ability to differentiate between real and perceived risks. Due to the present and future demand for marine resources and space, human activities in the marine environment are expected to increase, which will produce higher pressures on marine ecosystems, as well as competition and conflicts among marine users. This context continues to present challenges to permitting/consenting of commercial-scale development. Time-consuming procedures linked to uncertainty about project environmental impacts, the need to consult with numerous stakeholders and potential conflicts with other marine users appear to be the main obstacles to consenting WE projects. These are considered as non-technological barriers that could hinder the future development of WE in EU and Spain and Portugal in particular were, for instance, consenting approaches remain fragmented and sequential. Consequently, and in accordance with the Ocean Energy Strategic Roadmap published in November 2016¹, the main aim of the project consists on overcoming these non-technological barriers through the following specific objectives:

- Development of environmental monitoring around wave energy converters (WECs) operating at sea, to analyse, share and improve the knowledge of the positive and negative environmental pressures and impacts of these technologies and consequently a better knowledge of real risks.
- The resulting data collection will be used to apply and improve existing modelling tools and contribute to the overall understanding of potential cumulative pressures and impacts of larger scale, and future, wave energy deployments.

- Development of efficient guidance for planning and consenting procedures in Spain and Portugal for WE projects, to better inform decision-makers and managers on environmental real risks and reduce environmental consenting uncertainty of ocean WE introducing the Risk Based Approach suggested by the RiCORE (Risk Based Consenting of Offshore Renewable Energy Project), a Horizon 2020 project, which underline the difficulties for developers with an existing fragmented and sequential consenting approaches in these countries;
- Development and implementation of innovative maritime spatial planning (MSP) Decision Support Tools (DSTs) for Portugal and Spain for site selection of WE projects. The final objective of such tools will be the identification and selection of suitable areas for WE development, as well as to support decision makers and developers during the licensing process. These DSTs will consider previous findings (both environmental and legal, found in RiCORE) and the new knowledge acquired in WESE in order to support the development of the risk-based approach mentioned in iii);
- Development of a Data Sharing Platform that will serve data providers, developers and regulators. This includes the partners of the project. WESE Data Platform will be made of a number of Information and Communications Technologies (ICT) services in order to have: (i) a single web access point to relevant data (either produced within the project or by others); (ii) Generation of OGC compliant requests to access data via command line (advanced users); (iii) a dedicated cloud server to store frequently used data or data that may not fit in existing Data Portals; (iv) synchronized biological data and environmental parameters in order to feed models automatically.

3. Executive summary

The WP4 was focused on the development of an efficient guidance for planning and consenting procedures in Spain and Portugal for marine energy projects on environmental real risks and reduce environmental consenting uncertainty by integrating a Risk Based Approach.

For that purpose, the first task included the identification of national Spanish and Portuguese key stakeholders and the development of database (Galparsoro et al., 2019). This database included project developers and promoters, policy makers and regulators, consenting and surveying service providers, energy companies, academic experts (both in science and policy) and representatives of appropriate lobby and pressure groups. This information was very useful for direct consultation about consenting authorization process to national regulators during the life of the project. Afterwards, the second task reviewed the consenting processes of MRE projects in Spain and Portugal and introduced the general considerations of a risk-based approach and Adaptive Management (Bald and Apolonia, 2020). Thirdly, an assessment was carried out to understand how an effective risk-based approach can be implemented during the licensing process and during the environmental monitoring in Spain and in Portugal, in two different workshops held with key stakeholders from both countries (Apolonia et al., 2021). Finally, the present report corresponds to Deliverable 4.4. dedicated to the development of the final guideline which includes the update and the synthesis of the main legal requirements to be considered by developers to achieve the corresponding authorization for marine energy projects in Spain and in Portugal. The implementation of MSP in both countries is considered a facilitator legal tool in the consenting procedure, which maximizes compatibility with other uses and activities. However, an update of the plan should establish new areas or increment the existing ones for MRE projects in Portugal and a review of the authorization or concession procedures plan should be necessary for the reservation of areas in the in Spain. In this sense, the administrative procedure for electricity generation facilities o licences entails a bottleneck for the development of the sector in both countries.

4. Introduction

This report presents an updated guidance on consenting procedures in Portugal and Spain, prepared with information retrieved during the WESE project activities. During the course of the project the Spanish and Portuguese key regulatory authorities were engaged providing relevant contributions that were used to improve this guidance.

Furthermore, throughout the WESE project, some of the uncertainties underlined in the previous activities were reduced, therefore a more efficient procedure for environmental consenting is here analysed and proposed, considering the evaluation of the wave energy projects' risks to the marine environment and how an adaptive management process can be implemented after a follow up of environmental monitoring results. The proposals made in this report are suggestions that aim to support regulators in the implementation of these approaches to the environmental consenting process and therefore may contribute to support MRE developers during the different stages of project deployment: the installation, operation and decommissioning of their devices and infrastructures.

4.1 Context

Risk based assessment can be described as the use of information about the natural sensitiveness of the location and the project scale in order to define the level of requirements needed for the environmental studies. There is currently no specific single methodology to implement a risk-based approach to support environmental licensing of wave energy. However, an example of risk-based approach has been successfully implemented by Marine Scotland, applied to project consenting in Scottish waters – the Survey Deploy & Monitor (SDM). Other success cases may be found in EUA with an approach designated by Risk Retirement (see Apolonia et al., 2021 for a detailed description).

In Europe, the importance that this methodology can have in accelerating the deployment of marine renewables has been recognized by the EU, that has funded the European Project – RICORE. This project aimed at establishing an environmental licensing approach, based on the risk assessment of MRE technologies. Under the framework of this project, guidance has been published to support and push forward the MRE sector in Portugal, by compiling all the legal diplomas and providing a step-by-step list of actions that must be put in place to ensure the licensing process is successful (Jesus et al., 2016). This guide results from an in-depth study conducted in one of the RICORE project tasks (Lièvre et al., 2016), which presented and discussed licensing processes in several European countries.

Nevertheless, until the present date MSs have not implemented risk-based assessment methodologies in its legal framework as the licensing process sets high standards for MRE. The licensing procedure is complex, involves a large number of licenses and regulatory authorities that have different legal requirements and demands. Due to the uncertainties around the environmental impacts of WECs during the construction, operation and decommissioning phases, the wave energy sector is still largely perceived as a risky activity by regulators and stakeholders (Galparsoro et al., 2021a), that do not want to dismiss potential impacts.

4.2 Objectives

This deliverable brings guidance on licensing procedures in Spain and Portugal, based on the results of the previous tasks under this Work Package (WP): Tasks 4.1, 4.2 and 4.3. The guidance developed for Spain and Portugal aims to detail the various steps of the licensing process of MRE projects to be located on the continental coast. The report systematizes information on legal requirements and clarifies the sequence of procedures to tackle the difficulties experienced by developers, that must face a long, fragmented and sequential consenting. This guidance was produced in close contact with the main regulatory authorities engaged under the previous tasks of this WP in Spain and Portugal with the purpose of providing solution to the difficulties previously identified. This work attempts to integrate risk assessment and adaptive management into existing licensing procedures to point out how these methodologies can better inform decision-makers, regulators and managers on real environmental risks and reduce environmental consenting uncertainty of MRE. As a final goal it is expected that this guidance can also be applied to other countries or regions where the legal process are similar to Spain and Portugal.

5. Purpose Guidance

At the present moment, there is not fit for purpose legal framework to support the licensing process of MRE, in both Portugal and Spain, which means that renewable energy devices are licenced on a case-by-case scenario. Nonetheless, there has been an interest of the industry in deploying in the region, and as such the Bay of Biscay and the Iberian Continental waters have commonly been used as a test site for several projects, such as Pelamis, WaveRoller, Wello, CorePower, etc. While some project developers have navigated the long bureaucratic processes and achieved deployment successfully, others have seen their projects severely hindered by the complexity of the process e.g., Bombora, etc. More information about projects in both countries is available in EMODNET Human Activities platform (<https://www.emodnet-humanactivities.eu/view-data.php>).

The purpose of this guidance is to inform on the updated legal framework for MRE developers in Spain and Portugal, and to recommend best practices to overcome the complexity of licensing procedures currently in place. Bearing this objective in mind, whenever possible this report will provide a methodological approach for a risk-based assessment with the purpose of simplifying regulators' tasks when facing scientific uncertainty during the licensing and consenting process of renewable energy projects.

5.1 Portuguese guidance

In Portugal, there is currently no legal framework to support the licensing process for MRE. Depending on the characteristics of the project, the permitting process must undergo several licensing processes that are under the jurisdiction of fragmented public authorities. Although the main point of contact is the Directorate-General of Energy and Geology (DGEG), all agencies conduct their process separately, and therefore several authorities have to be contacted and consulted through the permitting process. Even though agencies work separately, some permits are interrelated, i.e., obtaining one is a condition to obtain the other. Nevertheless, all of them are binding to licence the project.

In general, the licensing process of MRE projects can be divided into the following licenses, articulated between each other:

1. Concession, license or authorisation for the private use of maritime space, which is called Title for the Private Spatial Use for the National Maritime Space (TUPEM);
2. Licensing of the energy production activity;

- i. Reserve capacity;
 - ii. Production license;
 - iii. Operation license;
3. Licensing projects and ancillary facilities on land; and
 4. Environmental Impact Assessment.

For projects with a power capacity up to 10 MW, DGEG is the authority in charge of licensing electricity production linking with other authorities for specific permits: the Directorate General for Natural Resources, Safety and Maritime Services (DGRM) for the TUPEM, Commission of Coordination and Regional Development (CCDR) or Environmental Portuguese Agency (APA) for the environmental license and local city hall for onshore facilities. All procedures are developed by the licensing authority – DGEG - from receiving the application elements to the communication of decisions and delivery of licenses to the developer.

5.1.1 Title for the Private Spatial Use for the National Maritime Space (TUPEM)

The private use of the National Maritime Space (EMN) is enforced through the TUPEM which is issued by DGRM. The procedure to obtain a TUPEM depends on the designation of the use in the area where the project is to be installed, which is established in the Maritime Spatial Planning Plan (PSOEM), also known as the Situation Plan, the instrument setting the baseline for the national MSP. The Situation Plan proceeds with the EMN planning, identifying protection and conservation sites for marine life and the spatial and temporal distribution of the existing and potential uses and activities. The Situation Plan is the instrument of reference for the licensing of the private use of EMN. The Situation Plan is subject to the Strategic Environmental Assessment (SEA), as determined by the Order that sets up the Situation Plan. The Situation Plan contents includes, among other information, the location of the elements related to navigation, facilities and structures, the geo-spatial representation of values, existing and potential uses and activities, the implementing rules and restrictions on the use of public resources, safeguard and protection systems of natural and cultural resources and good practices to be followed in the use and management of the maritime space (Jesus et al., 2016). DGRM developed a Geoportal for the Situation Plan where users of the maritime public space can consult information on spatial allocation of uses. (see the Geoportal [here](#)).

If the area to be used by the project is already designated for renewable energy production, the application for obtaining TUPEM is submitted and analysed directly by

DGRM and the emission of the title depends on the compliance of the elements delivered, as requested by the legal requirements. If the area to be used by the project is not designated for MRE production activity, the developer may propose the amendment of its designation by submitting an Allocation Plan, which, if approved, automatically changes the Situation Plan through Council Minister's Resolution. The approval of the Allocation Plan is the needed condition to issue TUPEM which is essential for the beginning of any use or activity in the maritime space.

The submission of the TUPEM request encloses, among other things, information concerning the area occupied by the project, an environmental monitoring plan and a safety and contingency plan. Consultation is usually required as part of the legal licensing process. It is usually made after the Environmental Impact Statement (DIA) is delivered to the authorities for approval. The licensing authority to several statutory consultees namely Institute of Nature Conservation (ICNF), port authorities and several public authorities responsible for marine resources management. There are informal consultation activities implemented by the developers during the licensing process.

5.1.2 Electrical permits

The license for energy production is composed by three subsequent permits. The first is the Reserve Capacity, the second the Power Production Licence and the third the Operation License. As the name suggests, the first permit guarantees the required power capacity from the grid is reserved by the Portuguese authorities. The second permit allows the project developer to build the power plant, this can only be requested when the TUPEM, the Environmental Impact Statement (DIA) and the Reserve Capacity are issued by the respective authorities. Finally, the third permit allows for the project developer to operate the power plant connected to the national grid and is issued after inspection to the built infrastructure.

The regulation of electricity production is established in two pieces of legislation that entered into force in 2012 and considers two types of production systems which correspond to two different legal schemes:

- Ordinary Production;
- Special Production, which includes electricity production by means of Renewable Energy Sources (RES).

The electricity production by RES is called the "Special Production" regime and follows specific licensing procedures that varies according to the tariff scheme, which has, in turn, two main types: 1) the regular tariff scheme and 2) the Feed-In Tariff (FIT) scheme.

Under the regular tariff scheme, the licensing process of a MRE project begins with a request to the Public Service Energy Network (RESP) for information on the public grid capacity for assigning a receiving point for the produced electricity. If the public grid is positive about the power reception capacity nearby the project location, the delivery of an application to obtain a production license may be submitted in the first 15 days of each quarter of year: 1 to 15 of January, May or September. If approved, a submission for the request of the respective operation license follows. To grant the operation license, an inspection to the facilities is carried out by the licensing authority.

The FIT scheme runs under a competitive procedure of public initiative or any other competitive procedure that ensures equality and transparency criteria to the selection of the candidates. This competition or procedure is coordinated by the member of the Government in charge of the Energy sector. The licensing process under the FIT scheme is established in a specific diploma, which after the signature of the contract between the developer and the member of the Government responsible for the energy sector, follows a similar procedure as the one established for the regular tariff scheme, i.e., request for capacity allocation to a receiving point in the RESP, request for a production license and, if approved, grant of the consequent certificate of operation.

5.1.2.1 Reserve Capacity

The reserve capacity request is submitted to DGEG and issued by the grid operator (EDP Distribuição). This is a title that requests the power capacity required by the applicant and will encompass a production license and an operation license. Obtaining the capacity reserve title is a necessary but not enough condition of the licensing process. After guaranteeing a reserve capacity in the grid, the applicant must submit the Production License application followed by an Exploration License application, to DGEG. DGEG is the licensing entity for projects with a power capacity of up to 10 MW. Above 10 MW the member of the Government responsible for the energy sector is the licensing authority.

5.1.2.2 Production License

Unless another deadline is established in the contract or award decision, the holder of the grid reception point in the RESP has 4 months to apply for the respective production license. However, this period is extended to 24 months if the point of reception is

intended for power stations whose production license assignment is subject to one of the following:

- Environmental Impact Assessment procedure (AIA);
- Environmental Appraisal procedure (AIncA);
- Issue of TUPEM (if power plants are to be installed in the EMN);
- Public bid procedure, as per the Public Procurement Code.

The production license holder must complete the installation works of the power plant and start its operation within the period established in the production license, which, according to the general rule should not exceed two years. However, if needed other limits maybe set by the member of the Government responsible for the energy sector in a specific Ordinance. The period shall run from the date of the production license issuance. The deposit is returned to the holder of the production license by the time of the plant operation starting date when it occurs within two years, or at the end of an extension granted by the licensing authority upon request, duly justified by the developer, which may not exceed half of the initial period established for the beginning of the plant operation.

The production license expires when the holder does not complete the power plant installation works on time.

5.1.2.3 Operation License

The project developer should require from DGEG the operation license, which is issued following an approved report on the power plant inspection. The developer can only start the exploitation of the power plant after the operation license is issued, since it defines the operation conditions to which the power plant is subjected. Once granted, the operation license becomes part of the production license conditions.

5.1.3 Environmental Permitting

In Portugal, the current AIA legal system (Legal System of the Environmental Impact Assessment - RJAIA) was established by the DL 151-B/2013. In the case of MRE projects with a capacity below 50 MW (or below 20 MW when located in sensitive areas) a case-by-case screening procedure (Apreciação prévia e decisão de sujeição a avaliação de impacto ambiental) is carried out to decide whether an AIA procedure is required (Figure 5-1). This procedure starts with the delivery of an application to the licensing authority (DGEG), with the structure and contents defined in Annex I of Ordinance 395/2015. MRE projects that are not covered by the RJAIA and are located

in areas belonging to the National Ecological Reserve (REN), protected areas and Natura 2000 network sites were subject to an Environmental Appraisal procedure (AlncA). However, the recent amendment of DL 215-B/2012 through DL 76/2019 modified the Environmental Appraisal (AlncA) procedure. The article stating that MRE projects not covered in the RJAIA and located within areas belonging to REN, Natura 2000 Network sites or Protected Areas, were subject to an AlncA procedure was revoked. This article was replaced by an article that states that MRE projects not covered in the RJAIA are subject to an AlncA procedure only if located within Natura 2000 Network (Figure 5-1).

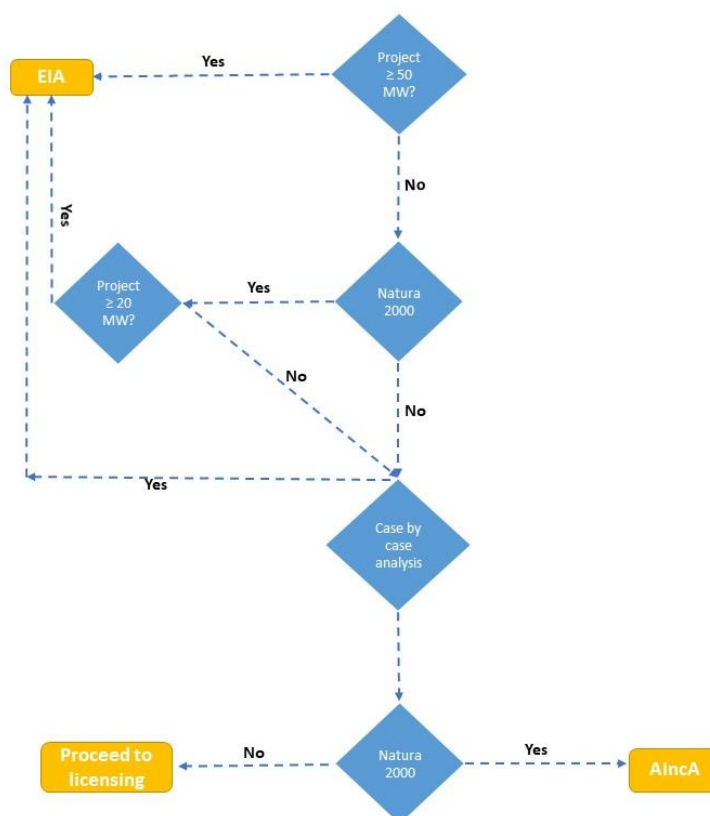


Figure 5-1 - EIA screening process (adapted from Jesus et al., 2017 and modified by the DL 76/2019).

If the project is not subject to an AIA or AlncA, the developer may proceed in the licensing procedure provided a favourable advice on the project installation on the proposed location is submitted to the regional authority (CCDR).

There is a great similarity between the AIA and the Environmental Appraisal (AlncA) procedures, which includes the contents of the report to be submitted by the applicant. If the project is not subject to the legal systems of EIA (AIA) or Environmental Appraisal (AlncA), a favourable advice on the project installation at the proposed location,

focusing on its potential environmental impacts, is still needed from the regional authority (CCDR) to license the project.

More recently, the EIA Directive has been amended by the Directive 2014/52/EU, which was transposed to Portuguese AIA legal system (RJAIA) through DL 152-B/2017. This amendment aims at improving the environmental assessment of projects through procedure simplification. Among other amendments, the new AIA Directive includes the establishment of mitigation measures as well as monitoring programs.

Both the issuance of the TUPEM and production license requires a favourable or conditionally favourable DIA and, when required, a favourable or conditionally favourable Decision on the Environmental Compliance of the Detailed project design (DCAPE) or, if applicable, a favourable or conditionally favourable Environmental Appraisal Statement (DIncA).

SEA is mandatory for the Situation Plan for which it was performed and published in 2018.

5.1.4 Licencing facilities on land

To license facilities on land (e.g., substations, switch gear stations, power transmission lines, buildings, access paths) a municipal license is required, which is coordinated by the city hall where the facilities are to be installed and should follow the legal system of urban development and building, as well as take in to account the applicable municipal regulations. Furthermore, whenever the construction works occur in the Maritime Public Space, the Port Authorities have to be consulted and a licence for construction has to be requested. Also, any construction works in this area require the Title for the Use of Water Resources (TURH) from the Administration of the Hydrographic Region, the regional branch from EPA.

5.1.5 Synthesis

The combination of the TUPEM, the production license, the TURH, the auxiliary licences in land and the fulfilment of all obligations regarding the environmental impact assessment procedures results in the necessary conditions for the exercise of the power production from MRE technologies in Portugal. The list of the titles and licenses is shown in Table 1 below.

Table 1 Characteristics of the licensing process.

Parameter	Relevant applicable laws	Licensing Authority	Name of document
Private use marine space	DL 38/2015 (amended by DL 139/2015) – transposes Directive 2014/89/EU and develops Act 17/2014 which sets forth the Bases of Spatial Planning and Management of the National Maritime Space (LBOGEM)	DGRM	TUPEM
Water Resources Use	DL 226-A/2007 (amended by Act 44/2012) DL 108/2010 (amended by DL 136/2013)	EPA (AHR)	TURH
Energy Production	DL 172/2006 (6 th amendment through DL 215-B/2012 and 11 th amendment through DL 76/2019) Ordinance 243/2013 (amended by Ordinance 133/2015)	DGEG – power capacity up to 10 MW Secretary of State of Energy – power capacity higher than 10 MW	License on power production and grid connection
Accessory facilities onshore	DL 555/99 (amended by DL 136/2014) - RJUE	Local planning authority	Planning Permission
EIA	DL 151-B/2013 (amended by DL 152-B/2017) – transposes Directive 2014/52/EU	EPA – location in sensitive area DGEG – project not located in sensitive area) CCDR – EA	EIA/EA

5.2 Spanish guidance

The EU requires each Member State to draft a **National Integrated Energy and Climate Plan, Plan 2021-2030 (PNIEC)**. In Spain, a draft of the PNIEC was submitted to the European Commission in March 2020, and it was included in the public consultation phase of the Strategic Environmental Assessment (in accordance with the provisions of the Law 21/2013 on Environmental Assessment) in June 2020. The European

Commission made a series of recommendations which were incorporated into the draft of the PNIEC. In March 2021, the official resolution of the Directorate General for Energy Policy and Mines and the Spanish Office for Climate Change was published, by which the final version of the PNIEC 2021-2030 was approved. In Spain, PNIEC 2021-2030 together with Royal Decree 363/2017, represent the general framework under which the marine renewable energy industry must be developed.

Moreover, the EU establishes a framework for the **Maritime Spatial Planning Plans (PSOEM)** which is regulated by the Directive 2014/89/EU of the European Parliament and of the Council, of July 23, 2014 (Art. 1). This standard promotes the sustainable growth of maritime economies, the sustainable development of marine spaces and the sustainable use of marine resources and indicates that the interactions between land and sea and the improvement of transboundary cooperation must be considered. The main obligation of the Directive is to establish maritime management plans (Art. 8), determining the spatial and temporal distribution of existing and future activities such as the production of energy from renewable sources.

In Spain, Directive 2014/89/EU was transposed into Royal Decree 363/2017 of April 8, which, as well as the European directive, establishes a framework for maritime spatial planning, promoting the growth and sustainable development of maritime economies, of marine spaces and the sustainable use of marine resources.

This Royal Decree establishes that Spain **PSOEMs covers the 5 marine demarcations** established by Law 41/2010 for the protection of the marine environment: the North Atlantic, the South Atlantic, the Strait and Alboran, Levante / Balearic Islands and the Canary Islands. Furthermore, this Royal Decree establishes the procedure to prepare the POEMs and the time necessary to carry them out, assigning to the General Directorate of Coasts the tasks for coordinating and notifying them to the European Commission.

On the other hand, the Law 41/2010 for the protection of the marine environment is the transposition of the *European Directive 2008/56/EC on the Marine Strategy*, whose objective is to achieve the good environmental status of marine waters. The **Royal Decree 363/2017** was issued in application of the provisions of article 4.2 of Law 41/2010, which establishes that the Government can approve common criteria to all marine strategies to guarantee the coherence of its objectives, as the planning of activities or uses that may affect the marine environment.

In conclusion, the procedure to develop the **PSOEMs should make use of all the information generated by the Marine Strategies**, and it should be ensured that these

plans are applied in an ecosystem manner, in which achieving the good environmental status of the marine ecosystem is insured and unencumbered.

The **characteristics** of PSOEMs can be summarized as:

- **Based on the ecosystem**, balancing ecological, economic, and social objectives for the sustainable development
- **Integrated**, among the different sectors, and among the different administrations
- **Based on spatial planning**
- **Adaptable**, learning from experience continually
- **Strategic** and forward-looking, focused on the long term
- **Participatory**: the actors are actively involved in the process

During the first semester of 2020, the Strategic Environmental Assessment process began with a first draft of the Spanish PSOEMs, together with the Initial Strategic Document.

From July 2021 to September 2021, together with the Strategic Environmental study, there was a **public consultation** (according to Article 22 of Law 21/2013) to the affected public administrations and to the interested agents with the objective of collecting all their contributions for the improvement of PSOEMs. ***In this sense, the Strategic Environmental processing of the PSOEMs as well as the final version the PSOEMs (including the suggestions and corrections from public consultations) should be completed by the end of 2022***, through its publication in the Official Bulletin of Spanish Government. Geographic information of the POEMs can be consulted through the INFOMAR viewer- Ministry for the Ecological Transition and the Demographic Challenge (MITERD): <http://www.infomar.miteco.es/visor.html>. Figure 5-2 shows the Spanish POEM proposal on the Cantabrian coast and on the Galician coast (North Atlantic demarcation) according to the different uses, among which the areas with high potential for development of offshore wind power (polygons in dark blue) and for research (in light green) are represented.

Among other activities, the PSOEMs consider the development of renewable marine energies in accordance with the PNIEC 2021-2030 (explained above). To this end, the PNIEC contemplates the development of a **roadmap of "Spanish Strategy for the development of Offshore Wind and Marine Energy"**, coordinated and aligned with the Marine Space Planning Plans, the conclusions, and objectives of which may be incorporated into the periodic reviews of this plan.

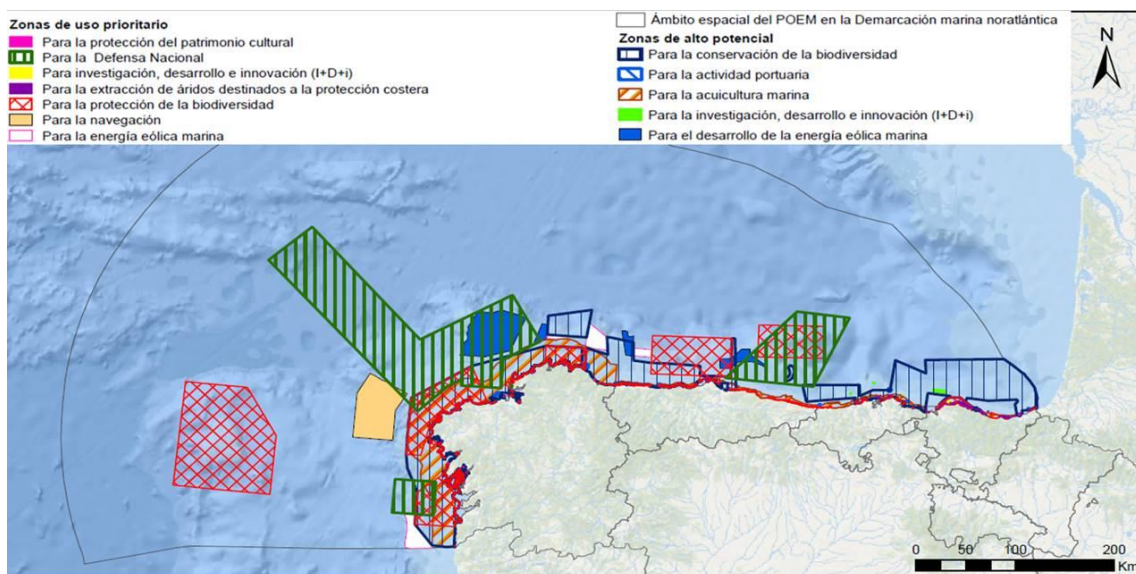


Figure 5-2 Spanish POEM proposal on the Cantabrian coast and on the Galician coast (North Atlantic demarcation) according to the different uses, among which the areas for development (polygons in dark blue) and for research (in light green) of offshore wind power are represented.

Finally, *this roadmap for the development of Offshore Wind and Marine Energies in Spain is currently in the draft phase, submitted for public consultation from July 2021 to August 2021. The corresponding final draft will be scheduled for 2023.*

The roadmap is framed in the following *international context of the EU of Marine Renewable energies, in the Strategic Framework for Energy and for the Climate Change*:

1. Blue Growth Strategy
2. Paris Agreement
3. European Green Deal, Strategy for a Climate Neutral Europe in 2050
4. European Strategic Plan for Energy Technologies

Regarding the *national context*, the roadmap is mainly composed by the following tools:

1. National Integrated Energy and Climate Plan (PNIEC) 2021-2030 (described above).
2. Long-Term Decarbonization Strategy 2050¹.

¹ <https://www.miteco.gob.es/es/prensa/ultimas-noticias/el-gobierno-aprueba-la-estrategia-de-descarbonizaci%C3%B3n-a-largo-plazo-que-marca-la-senda-para-alcanzar-la-neutralidad-clim%C3%A1tica-a-2050/tcm:30-516141>

3. Law 7/2021, of May 20, on climate change and energy transition².
4. Fair Transition Strategy³.

Considering the state of the art of marine renewable energy, the roadmap of "Spanish Strategy for the development of Offshore Wind and Marine Energy" established the following development objective ranges for Marine Energies in Spain by 2030: 1-3 GW for floating marine energy and 40-60 MW for wave and tidal energy, which represents at least the 5% of the European objectives for 2030.

At this point, it is important to mention that the **management of marine space (PSOEMs) requires a review of the authorization or concession procedures for the allocation or reservation of areas for the development of activities in the Spanish marine space**, including the current administrative procedure for the authorization of production facilities of electrical energy in the marine space, through Royal Decree 1028/2007 (described in 4.2.1) which establishes the administrative procedure for the processing of applications for authorization of electricity generation facilities in the territorial sea.

This procedure entails, prior to the administrative authorization processing, a request and granting by means of a **competitive competition procedure for a reservation zone**, which includes: the estimation of the maximum generation assessable to the electrical transport networks and the impact of the project on the ecosystem elements of the affected area. In this context and, in line with the roadmap of "Spanish Strategy for the development of Offshore Wind and Marine Energy", **it is necessary to adapt the current administrative procedure in Spain**.

The **approval procedure in force for a marine energy project in Spain** is based on the following **four** legal instruments (summarized in 5.2.5 section, Figure 5-3).

5.2.1 Licensing power generation activity

The regulatory framework in force for the processing of offshore wind and offshore energy facilities is the **Royal Decree 1028/2007** which establishes the *administrative procedure for processing applications for electricity generating facilities in territorial waters*. The competences over electricity production, transmission and distribution facilities are held by the General State Administration and shall be exercised by the **Directorate General for Energy Policy and Mines (DGEPM)** of the current Ministry for the Ecological Transition and Demographic Challenge (METDC), as the **substantive**

² <https://www.boe.es/boe/dias/2021/05/21/pdfs/BOE-A-2021-8447.pdf>

³ https://www.miteco.gob.es/es/prensa/190222npestrategiatransicionjusta_tcm30-487297.pdf

body, to grant administrative authorization for the construction, extension, modification and closure of facilities, without prejudice to those expressly attributed to the Council of Ministers.

RD 1028/2007 focuses on marine wind energy, but it also contemplates the authorisation of other electricity generation technologies of a renewable marine nature located in the territorial sea in **Article 32**. It only foresees a **simplified procedure** which is regulated by a subsidiary character in accordance with *Royal Decree (RD) 1955/2000, regulating the activities of transport, distribution, commercialization, supply and authorization procedures for electrical power plants*⁴, without establishing a minimum power limitation.

RD 1955/2000 also provides that construction, extension, modification and exploitation of all electric installations listed (in article 111) require the following administrative procedures and sanctions to be followed:

- Request for Administrative Authorisation (AA): refers to the project's draft of the installation as a technical document.
- Project Execution Approval (PEA): refers to the commissioning of the specific project and allows the applicant to start construction.
- Exploitation Authorisation (EA): allows the installations, once the project is installed, to be powered up and proceed to commercial exploitation.

5.2.1.1 Request for Administrative Authorisation (AA)

The request for an AA refers to the project's draft of the installation as a technical document. Such request must be addressed to the DGEPM and might also be forwarded to the Department or Division of Industry and Energy of the Government Delegations or Sub-Delegations of the province where the installation requesting this administrative authorization is located for the construction, extension, modification and exploitation of electric installations to be produced, transported and distributed.

Likewise, these requests may be addressed to the entities mentioned in article 38.4 of *Law 30/1992, 26 November, on Rules governing general government institutions and Common Administrative Procedure*⁵.

⁴ <https://www.boe.es/buscar/act.php?id=BOE-A-2000-24019>

⁵ <https://www.boe.es/buscar/act.php?id=BOE-A-1992-26318>

The authorization procedure is determined by the DGEPM. According to RD 1955/2000, the resolution and notification shall occur “within three months from receipt of the request for administrative authorization” (art. 128.1).

The request for AA can be submitted together with the application of an EIA process according to *Law 21/2013, December 9th, on Environmental Impact Assessment*. For the approval of the AA, the Environmental Impact Statement (EIS) of the Directorate General for Environmental Quality and Assessment (DGEQA) of the Ministry for Ecological Transition and Demographic Challenge (METDC) is needed.

With these two elements, the process for the occupation of the Maritime-Terrestrial Public Domain (MTPD) according to the *Law 2/2013, of 29 May, for protection and sustainable use of coasts* will be initiated. The Directorate-General for the Coast and Sea (GDCS) will determine the occupation of the MTPD considering the EIS and conditions stated in the authorization of the procedure by the DGEPM.

5.2.1.2 Approval of the Execution Project

The Approval of the Execution Project (AEP) refers to the specific project of commissioning and allows the applicant to start building up. The applicant of the authorization will submit to the division or, if applicable, the Department of Industry and Energy (DIE) in the Government Delegations or Sub-delegations of the province where the installation will be developed, a request addressed to the DGEMP, as required in article 70 of Law 30/1992, of 26 November 1992, on Rules governing general government institutions and Common Administrative Procedure (see previous section), together with the execution project based on the relevant specific Technical Regulations. Divisions, or if applicable, DIE in the Government Delegations or Sub-delegations of the provinces where the installation will be located and developed, will be responsible for processing the request for approval of the execution project and shall resolve and grant the consent within three months. The competent administration may consult other affected institutions, entities or companies devoted to public service or general interest services in charge of goods and rights in the area so that they can set relevant technical conditions within twenty days.

5.2.2 Licensing for private occupation of marine space

The licensing procedure for the occupation of the MTPD was first regulated by the **Coast Law, 28 July 1988**. This Law was amended in 2013 by the **Law 2/2013, of 29 May, for protection and sustainable use of coasts**. It provides the legal framework for occupation of the territorial sea, as well as governing issues affecting the fishing sector and safety conditions for maritime navigation. It is the responsibility of the METDC,

through the **Directorate General for Sustainability of the Coast and the Sea (DGSCS)**, to grant the authorizations and concessions for the occupation of the maritime-terrestrial public domain (MTPD) required for the installation of a marine electricity generation park. In the case of occupation of the public port domain, the competent **Port Authority (PA)** will grant the corresponding authorization or concession, in accordance with the provisions of the applicable sectorial legislation.

Therefore, the development of projects on electric power in the territorial sea must comply with the legal requirements regulating the conditions to process administrative titles granting a certain territory's occupation (both previous and during the project's development) and the dispositions in terms of deadlines, transference, and extinction.

5.2.2.1 *The Maritime-Terrestrial Public Domain (MTPD)*

The following areas are considered as MTPD:

1. The shores of the sea and the estuaries, which includes:
2. The maritime-terrestrial area or space between the maximum low-tide line and the limit up to which the waves reach during the greatest known storm periods of time, or when it exceeds this limit, that of the maximum high-tide line. This area also extends along the riverbanks to the site where the effect of the tides is felt.

This area includes marshes, lagoons, swamps and, in general, those parts of lowlands that are flooded as a result of the ebb and flow of the tides, the waves or the filtration of sea water. However, those lands that are artificially flooded and controlled as a result of works or installations carried out for this purpose will not become part of the maritime-terrestrial public domain, provided that before the flooding they were not in the public domain.

3. Beaches or deposit areas of materials such as sand, gravel and pebbles, including escarpments, berms and dunes, the latter shall be included to the extent necessary to ensure the stability of the beach and the defence of the coast.
4. The territorial sea and inland waters, with their bed and subsoil, defined and regulated by their specific legislation.
5. The natural resources of the economic zone and the continental shelf defined and regulated by their specific legislation.

5.2.2.2 *Previous conditions for the licensing of occupation of MTPD*

The MTPD can only be occupied for those activities or facilities that, by their nature, cannot be located elsewhere. The administrative title varies according to the time of stay or to whether fixed or removable works or installations are required. Thus, authorization is required for the public goods occupation of dismountable facilities or with movable property with a term of less than one year. The rest requires an administrative concession.

For the licensing of the title the following documentation is required:

- a) Accreditation of the applicant
- b) A basic or construction project.
- c) When the use of the MTPD is not carried out by the administration, an economic-financial study will be presented. This study will develop the foreseen evolution of the exploitation of the project, considering different alternatives of amortization period with the relation and estimated revenues, with tariffs to be paid by the public and, if it is the case, decomposition of its constitutive factors as a base for future revisions; expenses, including project and construction costs and fees and taxes to be paid, conservation costs and energy, personnel and other consumption costs necessary for operation, and, when corrective measures are envisaged, those arising from the monitoring plan to verify the effectiveness of such measures and the net profitability.
- d) A provisional deposit of 2% of the budget for the physical execution of the project must be lodged, rising to 5% in the final budget once the certificate has been obtained. The deposits are irrevocable and automatically executed by resolution of the competent body. The deposit will be returned after one year from the date of the act of recognition of the works in which it is proven that they have been carried out in accordance with the approved project.

The basic project, written by a competent technician, must contain:

- a) The characteristics of the installations and works.
- b) The extent of the MTPD to be occupied or used.
- c) Memory with the express statement of compliance with the Coast Law and the general and specific rules issued for its development and implementation. The provisions of the project must be compatible with the current urban planning and must be included in the project.

- d) Basic criteria of the project, the programme for carrying out the work and, where appropriate, the waste-water disposal system
- e) Plans, with representation of the boundary, of the area to be occupied and its easements.
- f) Photographic information of the area.
- g) Budget for the work.

Once the title has been obtained, and before starting the work, the construction project will be formulated, without prejudice to the fact that it may be presented initially as a replacement for the basic one.

It is important to emphasize that the project must provide for the adaptation of the works to the environment in which it is located and the influence or not of these on the coast. This is done through a basic study of the dynamics of the corresponding coastal physiographic unit, which must contain the following aspects (article 92 of RD 1471/1989):

- a) Study of the transport capacity of the coast.
- b) Sedimentary balance and evolution of the coastline, both previous and foreseeable.
- c) Maritime climate, including statistics on waves and directional and scalar storms.
- d) Bathymetry until areas of the bottom that are not modified, and form of balance, in plan and profile, of the section of coast affected,
- e) The geological nature of the seabed.
- f) Conditions of the underwater biosphere.
- g) Available aggregate resources and their suitability for the provision of dredging or sand transfer.
- h) Plan for monitoring planned actions.
- i) Proposal for minimising, where appropriate, the impact of the works and possible corrective and compensatory measures.

5.2.2.3 Administrative titles

The administrative title varies depending on time permanence, work requirements and/or fixed or removable installations: (i) authorizations and (ii) concessions.

- **Authorizations:** an authorization procedure starts when the application, together with credentials identifying the applicant and representative person, as well as previously related documentation, is presented in the Coast Service Peripheral. Once the project is examined, after paying the applicable fees, field confrontation will follow, aimed at determining its suitability and feasibility. A project's report will be submitted to Guildhalls, where the object of authorization may be developed, and to the Autonomous Community, the competent entity in navigation issues in case the works or installation may imply a risk on maritime safety, and any other entities that may be involved. Authorizations with analogous criteria are granted by the Coast Service Peripheral.
- **Concessions:** regarding concessions (which is the case of WTE projects), the Project must be submitted for public information for a time period of twenty days, simultaneously to the report to official entities. In case consent is granted, the applicant will comply with the conditions set thereby. In case of agreement, the Ministry of Rural, Marine and Natural Environment will discretionally determine if the concession is finally granted.

Application deadlines of the files are set to be four months for authorizations and eight months for concessions.

5.2.2.4 Effects of the titles

The authorizations have a maximum term of 4 years.

Concessions have a maximum term of 75 years.

5.2.3 Environmental Impact Assessment

Law 21/2013, of 9 December of environmental assessment establishes the EIA procedures for plans and programs (Strategic Environmental Assessment-SEA) and the EIA of projects. For both procedures, two processing routes have been established: ordinary and simplified which will be explained below. The METDC, through the **DGEQA**, will act as the environmental body in the environmental assessments.

5.2.3.1 Strategic Environmental Assessment (SEA) for plans or programs

Chapter I of the Title II of the Law 21/2013 contains the provisions relating to SEA, regulating the ordinary and simplified procedures.

5.2.3.2 Ordinary procedure of SEA

The ordinary SEA procedure will contain the following steps:

1. **Application to the initiation of the ordinary SEA procedure:** the developer shall submit to the substantive body, together with the documentation required by the sectoral legislation, a request to initiate the ordinary SEA, accompanied by the draft plan or programme and an initial strategic document (ISD) containing at least the following information:
 - b) The objectives of the planning.
 - c) The scope and content of the proposed plan or programme and its alternatives reasonable, technically and environmentally feasible.
 - d) The predictable development of the plan or programme.
 - e) The potential environmental impacts taking into account the climate change.
 - f) Foreseeable impacts on sectoral and territorial plans concurrent.

Once the substantive body checks that all the documentation sent by the developer is correct, it will send the request for initiation and the documents that must accompany it to the environmental body. Within twenty working days from the receipt of the request to initiate the ordinary SEA, the environmental body may resolve its inadmissibility.

2. The environmental body shall submit the draft plan or programme and the ISD for consultation by the public administrations concerned and interested persons, who shall give their opinion within forty-five working days of receipt.

The environmental body will have a maximum period of three months, counting from the reception of the request to start the ordinary SEA, accompanied by the draft plan or programme and an initial strategic document, to carry out the foreseen consultations and to elaborate a document of **scope of the strategic environmental study (SES)**.

Once the responses to the consultations have been received, the environmental body will prepare and send to the promoter and the substantive body the document

on the **scope of the SES**, together with the responses received to the consultations made.

3. **Preparation of SES:** taking into account the scoping document, the developer shall prepare the SES, which shall identify, describe and evaluate the likely significant environmental effects of implementing the plan or programme, as well as reasonable alternatives that are technically and environmentally feasible, taking into account the objectives and geographical scope of the plan or programme.

The developer will prepare the initial version of the plan or programme taking into account the SES and will submit both documents to the substantive body.

4. The substantive body will submit both documents to **public information**. Simultaneously with the public information process, the substantive body will submit the initial version of the plan or programme, accompanied by the SES, for **consultation with the public administrations concerned and interested persons** which shall have at least forty-five working days from the submission of the initial version of the plan or programme, accompanied by the SES, to issue such reports and claims as they deem appropriate.

Taking into account the claims made in the public information and consultation procedures, including, where appropriate, transboundary consultations, the developer shall, if necessary, modify the SES and prepare the final proposal for the plan or programme.

The maximum term for the elaboration of the SES and for the realization of the public information and the foreseen consultations will be fifteen months from the notification to the promoter of the document of scope.

5. Technical analysis of the dossier: the substantive body shall forward to the environmental body the complete strategic environmental assessment dossier, consisting of:
 - a) The final proposal for the plan or programme.
 - b) The strategic environmental study.
 - c) The result of the public information and consultations, including if necessary cross-border consultations as well as their consideration.
 - d) A summary document in which the developer describes the integration into the final proposal of the plan or programme of the environmental aspects, the SES

and its appropriateness to the scope document, the outcome of the consultations and how they have been taken into account.

The environmental body will carry out a technical analysis of the dossier, and an analysis of the significant environmental impacts of implementing the plan or programme, which will take into account climate change.

- **Strategic environmental statement (SESt):** once the technical analysis of the dossier has been completed, the environmental body will formulate the SESt within four months of receiving the complete file, which may be extended for a further two months for justified reasons duly justified and communicated to the developer and the substantive body.

For the technical analysis of the file and the formulation of the SESt, the environmental body will have a period of four months, extendable by two more months.

5.2.3.3 Simplified procedure of SEA

The ordinary SEA procedure will contain the following steps:

- Application to the initiation of the simplified SEA procedure:** the developer shall submit the substantive body, together with the documentation required by sectoral legislation, a request to start the simplified SEA, together with a draft of the plan or programme and a strategic environmental document (EED). Within twenty working days from the receipt of the request to initiate the simplified SEA, the environmental body may resolve its inadmissibility or not.
- Consultations with the public administrations concerned and interested persons:** the environmental body shall consult the public administrations concerned and interested persons, making available to them the EED and the draft plan or programme. They will have a maximum of forty-five working days from the receipt of the request for a report for making any comment or amendment.
- Strategic Environmental Report (SER):** the environmental body, taking into account the outcome of the consultations carried shall decide by issuing the SER within four months of receiving the request to initiate and the documents that must accompany it. The resolution may determine:
 - a. The plan or programme should be subject to regular strategic environmental assessment because of the potential for significant environmental effects.

- b. The plan or programme has no significant impact on the environment, in the terms set out in the strategic environmental report.

5.2.3.4 EIA for projects

Chapter II of the Title II of the Law 21/2013 regulates the evaluation of environmental impact of projects with a greater degree of detail than the previous law did, providing greater legal security. It may be, like the strategic one, **ordinary** or **simplified**.

5.2.3.5 Ordinary procedure of EIA

Section 1 regulates the ordinary procedure of environmental impact assessment, which applies to the projects listed in Annex I, including some new features in view of the experience acquired and the problems diagnosed.

The procedure itself is initiated when the substantive body⁶ sends to the environmental body⁷ the complete dossier, which includes:

- a) the project,
- b) the EIS and;
- c) the result of the public information and consultations with the public administrations concerned and interested persons.

However, prior to the procedure, a series of formalities must be carried out, some of which are obligatory and others optional.

The first of these preliminary procedures is to determine the **scope of the EIS** which, as a novelty in this law, will be voluntary for the developer, as provided for in Directive 2011/92/EU of the European Parliament and Council of 13 December. Thus, the developer may request, in accordance with Article 34, that the environmental body draw up the document containing the scope of the environmental impact study. The maximum period for its preparation is three months.

To this end, the developer shall submit to the substantive body a request for determination of the scope of the environmental impact study, accompanied by the initial project document, which shall contain at least the following information:

- a) The definition, characteristics and location of the project

⁶ That body of the state, regional or local public administration competent to authorise or approve projects to be submitted to environmental impact assessment

⁷ That body of the state or regional public administration competent to assess the environmental impact of projects.

- b) The main alternatives being considered and an analysis of the potentials impacts of each of them.
- c) A territorial and environmental diagnosis affected by the project.

Once the substantive body has formally verified the adequacy of the documentation submitted, it will send it, within ten working days, to the environmental body for the preparation of the document with the scope of the environmental impact study.

For the elaboration of the document of scope of the environmental impact study, the environmental body will **consult the affected public administrations and interested persons**. The public administrations concerned and the interested persons consulted must give their opinion within a maximum period of thirty working days from the receipt of the documentation. The law establishes, for the first time, that the report of the body with jurisdiction over the environment of the Autonomous Community, the report of the basin body, the report on cultural heritage and, if appropriate, the report on the maritime-terrestrial public domain (MTPD) will be mandatory.

Once the responses to the consultations have been received, the environmental body will prepare and send the document on the scope of the environmental impact study to the promoter and the substantive body, together with the responses received to the consultations made within a period of 3 months.

The public information and consultation procedures will be valid for one year from their completion. Once this period has elapsed without the ordinary environmental impact assessment having been initiated, the substantive body shall declare the expiry of the aforementioned procedures.

After the previous actions above mentioned, the evaluation of ordinary environmental impact will be developed through the following procedures:

- 1) Application to the initiation of the EIA process.
- 2) Technical analysis of the environmental impact dossier.
- 3) Environmental impact statement (EIS)

Once the above procedures have been completed the **application to the initiation of the EIA process can be started**. This application is based on the preparation of the EIS and the implementation of a public information process and a consultation procedure with the public administrations concerned and interested persons.

The developer shall **prepare the EIS** containing at least the following information:

- a) General description of the project and forecasts over time of the use of the land and other natural resources. Estimates of the types and quantities of waste discharged and resulting material or energy emissions.
- b) A statement of the main alternatives studied, including the zero alternative, or no project, and a justification of the main reasons for the solution adopted, taking account of the environmental effects
- c) Assessment and, where appropriate, quantification of the foreseeable direct or indirect, cumulative and synergistic effects of the project on people, human health, flora, fauna, biodiversity, geodiversity, soil, subsoil, air, water, climatic factors, climate change, landscape, physical assets, including cultural heritage, and the interaction between all those factors, during the execution, operation and, where appropriate, demolition or abandonment phases of the project. Where the project is likely to have a direct or indirect impact on Natura 2000 sites, a specific section shall be included for the assessment of the impact on the site, taking into account the objectives of conservation of the site.
- d) Measures to prevent, correct and, where necessary, offset adverse effects on the environment.
- e) Environmental monitoring programme.
- f) Summary of the study and conclusions in easily understandable terms.

Then the promoter will present the project and the EIS to the substantive body, which shall submit them to **public information** for a period of not less than thirty days.

In parallel to the public information process, the substantive body will **consult the public administrations concerned and the persons interested**. They will have a maximum period of thirty working days from the receipt of the notification to issue the reports and make any allegations they deem relevant. The following reports should be requested by the substantive body on a mandatory basis:

- a) The report of the body with responsibility for the environment in the autonomous community in which the project is located.
- b) The cultural heritage report, where appropriate.
- c) The report of the body with competence in matters of public water, where applicable.
- d) The maritime-terrestrial public domain report, where appropriate.

Within a maximum period of thirty working days from the completion of the public information and consultation procedures with the public administrations concerned and interested persons, the substantive body shall send the reports and allegations received to the developer for consideration in the drafting, where appropriate, of the new version of the project and in the EIS.

Then, as stated before, the procedure itself is initiated when the promoter send to the substantive body, together with the documentation required by the sectoral legislation, a request to start the ordinary environmental impact assessment procedure, accompanied by the following documentation which shall constitute the minimum content of the environmental impact assessment dossier:

- a) the project,
- b) the EIS and;
- c) the result of the public information and consultations with the public administrations concerned and interested persons.

Once the due verifications have been made, the substantive body will send the request for initiation and the documents that must accompany it to the environmental body.

Within twenty working days from the receipt of the request to initiate the ordinary environmental impact assessment, the environmental body may decide that the dossier is inadmissible.

Then the environmental body will carry out a **technical analysis of the environmental impact dossier**, evaluating the environmental effects of the project, in particular, how the result of the public information process, the consultations with the affected public administrations and the interested parties and, if applicable, the result of the transboundary consultations have been taken into account. Climate change will also be taken into consideration.

If during the technical analysis of the environmental impact dossier the environmental body considers that the public information or consultations have not been carried out in accordance with the provisions of this law, it shall require the substantive body to correct the environmental impact file within three months.

Once the dossier has been admitted and after its technical analysis, the procedure ends with the resolution by which the **EIS** is formulated, which will determine whether or not the project should be carried out for environmental purposes and, if so, the environmental conditions under which it can be developed, the measures to correct

the negative environmental effects and, if appropriate, the compensatory measures for the aforementioned negative environmental effects. The EIS shall be of the nature of a mandatory and authoritative report and shall determine whether or not, for environmental purposes, the implementation of the project and, where appropriate, the conditions under which it may be carried out, the remedial measures and compensatory measures.

5.2.3.6 Simplified procedure of EIA

Section 2 of Chapter II regulates the simplified environmental impact assessment procedure, to which the projects included in the Annex II and those that are not included in Annex I or Annex II if they can directly or indirectly affect Natura 2000 sites should be submitted.

The procedure starts with the **request to start the simplified environmental impact assessment procedure** that the developer shall present to the substantive body together with an **environmental document** with the following content:

- a) The reasons for the application of the simplified environmental impact assessment procedure.
- b) The definition, characteristics and location of the project.
- c) A statement of the main alternatives studied and a justification of the main reasons for the solution adopted, taking into account the environmental effects.
- d) An assessment of the foreseeable direct or indirect, cumulative and synergistic effects of the project on the population, human health, flora, fauna, biodiversity, soil, air, water, climatic factors, climate change, landscape, material assets, including cultural heritage, and the interaction between all those factors, during the execution, operation and, where appropriate, demolition or abandonment phases of the project
- e) Where the project is likely to have a direct or indirect impact on Natura 2000 sites, a specific section shall be included for the assessment of the impact on the site, taking into account the objectives of conservation of the site.
- f) Measures to prevent, reduce, compensate and, as far as possible, correct any significant negative environmental impact of the implementation of the project.
- g) The way to carry out the monitoring that guarantees the fulfilment of the indications and protective and corrective measures contained in the environmental document.

Once it has been verified that all the documentation is correct, the substantive body will send the request for initiation and the documents that must accompany it to the environmental body. Within twenty days from the receipt of the request to initiate the simplified environmental impact assessment procedure, the environmental body may resolve its inadmissibility.

A key step in this procedure, as in the others, is **public consultation**, which must be carried out with the administrations concerned, and as a novelty, the persons concerned must also be consulted. Thus, the environmental body will consult the affected public administrations and interested persons, making available to them the environmental document of the aforementioned project. They must take a decision no later than 30 days after receipt of the request for a report.

The environmental body will formulate the **environmental impact report** within three months of receiving the request to initiate and the documents that must accompany and the result of the consultations carried out. This environmental impact report may determine that:

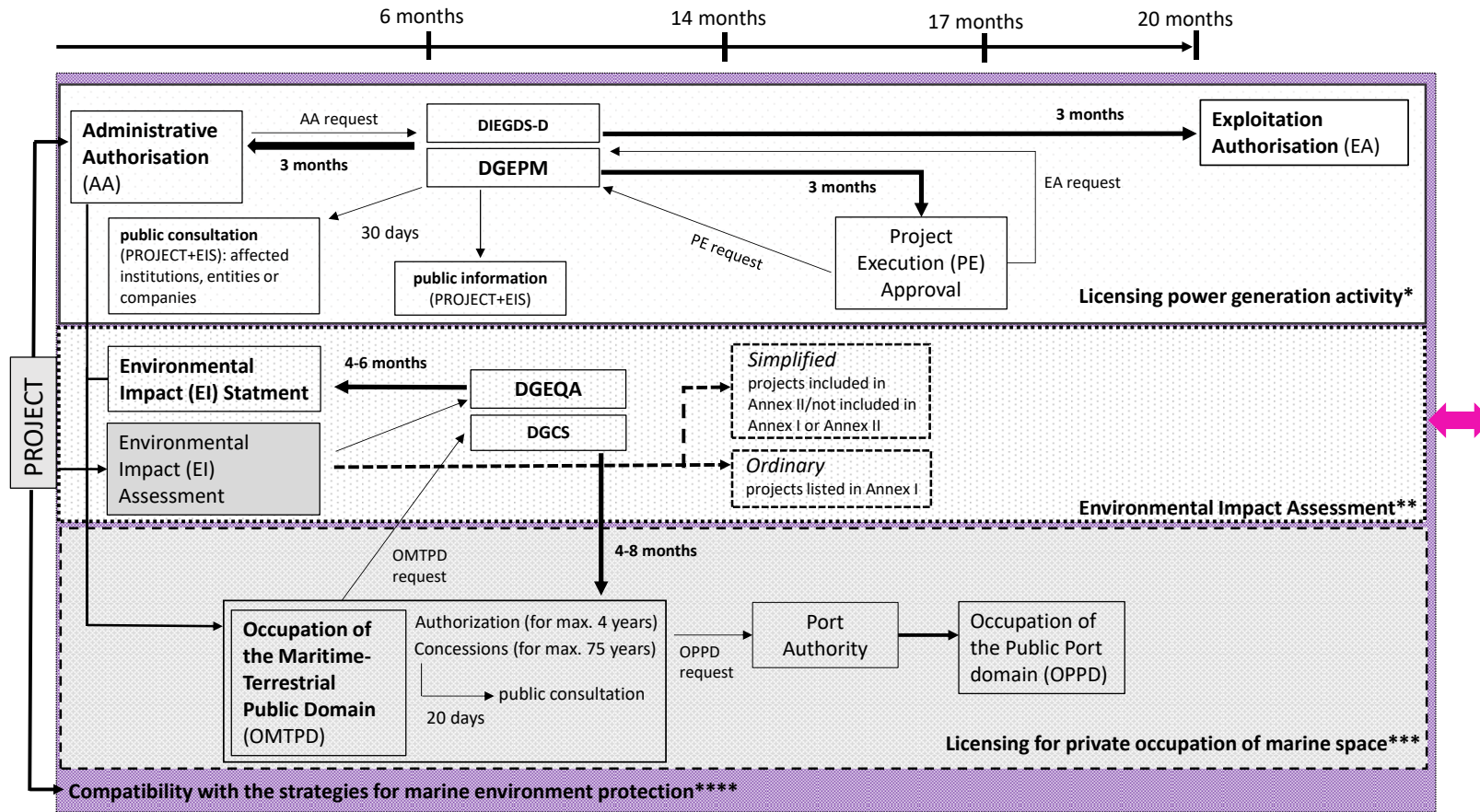
- a) The project has significant effects on the environment and consequently must be evaluated through an ordinary environmental impact assessment procedure.
- b) The project does not have significant effects on the environment, in terms set out in the environmental impact report.

It should be noted that the law expressly indicates, for the first time, that if the simplified procedure concludes with the need to submit the project to ordinary procedure, the actions carried out will be kept, so that it will not be necessary to carry out new consultations if the developer decides to ask the administration to determine the scope and content of the environmental impact study.

5.2.4 Compatibility with the strategies for marine environment protection

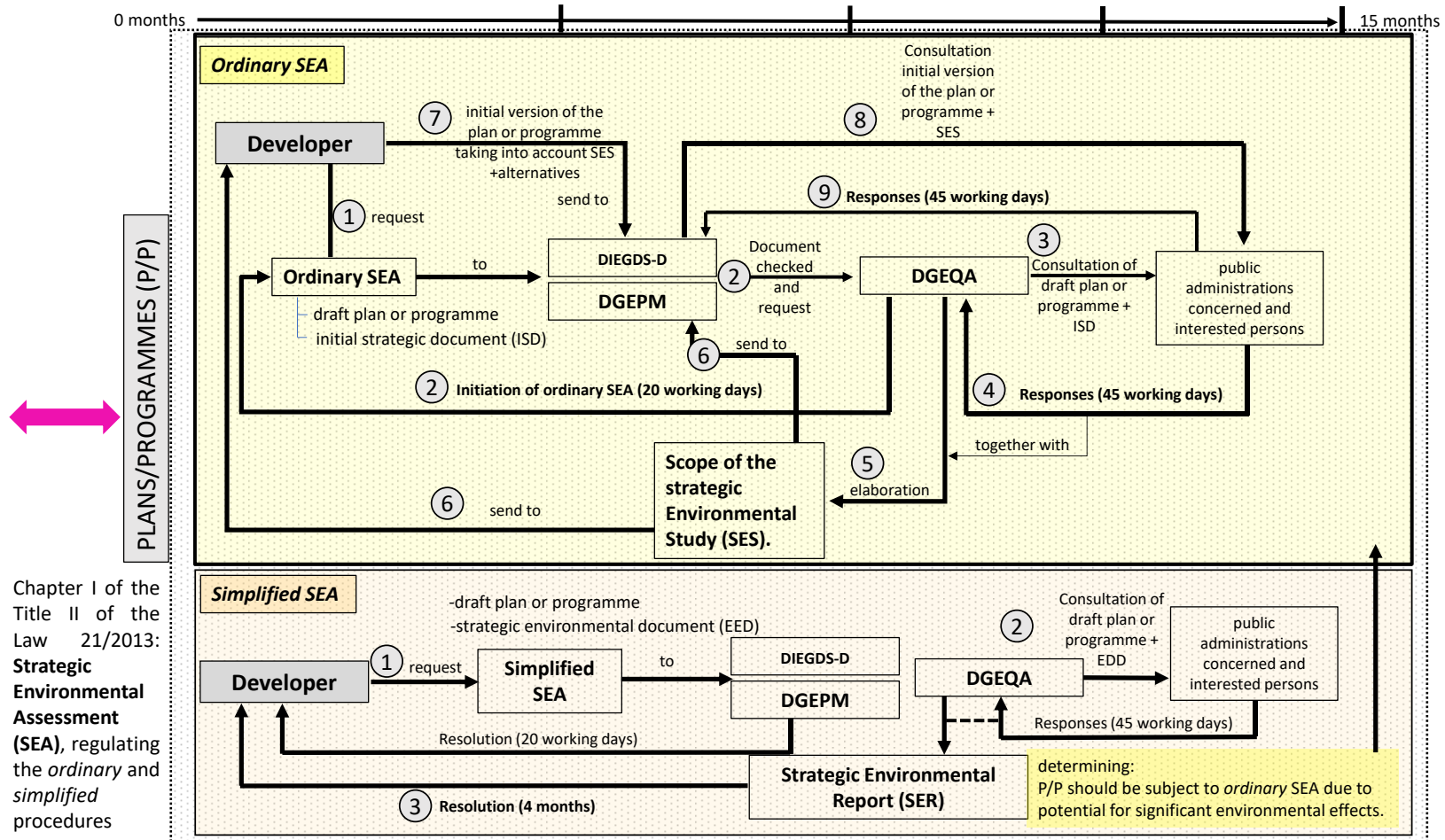
Royal Decree 79/2019 of 22 February regulating the compatibility report and establishing the criteria for compatibility with marine strategies. This RD develops the consenting procedure of compatibility reports to be issued by the METDC regarding "the compatibility of the activity or spill with the corresponding marine strategy in accordance with the criteria to be established by regulation", required by article 3.3 of Law 41/2010, of 29 December, on the protection of the marine environment.

5.2.5 Synthesis



* Royal Decree (RD) 1028/2007; ** Law 21/2013; *** Coast Law 1988 amended by Law 2/2013; **** RD 79/2019

Figure 5-3 Summary of the consenting process in Spain (for projects). DGEPM: Directorate General for Energy Policy and Mining. DIEGDS-D: Department or Division of Industry and Energy of the Government Delegations or Sub-Delegations of the province. DGEQA: Directorate General for Environmental Quality and Assessment. DGCS: Directorate General for the Coast and Sea.



Chapter I of the Title II of the Law 21/2013: **Strategic Environmental Assessment (SEA)**, regulating the *ordinary* and *simplified* procedures

Figure 5-4 (cont). Summary of the consenting process in Spain (for programmes). DGEPM: Directorate General for Energy Policy and Mining. DIEGDS-D: Department or Division of Industry and Energy of the Government Delegations or Sub-Delegations of the province. DGEQA: Directorate General for Environmental Quality and Assessment. DGCS: Directorate General for the Coast and Sea

6. Towards a risk-based approach

Risk based approaches are pointed out as appropriate solutions to simplify and accelerate the permitting process of wave energy. In general, there is no single methodology to implement a risk-based approach and, until the present date, applied procedures are limited to a very short number of case studies or legal frameworks that have been enforced, e.g., SDM by Marine Scotland (Figure 6-4) and Risk retirement by the Pacific Northwest National Laboratory (PNNL).

The general approach of SDM is based on a more flexible, fit for purpose application process. SDM is based on three main factors: environmental sensitivity – with regard to the receptor ecosystem, wildlife use or marine historic environment; scale of development – a single device, small array or large development; and device risk – does the development considers high risk equipment (maybe due to lack of knowledge of impacts), or is it a structure that should be considered as low risk. (Bald et al., 2015). Overall, SDM combines existing information on the environmental risks, technology risks, and project scale to distinguish between proposed projects for which there are sufficient grounds to seek determination on a consent application based on 1 year of wildlife survey and those proposed projects where a greater level of site characterisation is required.

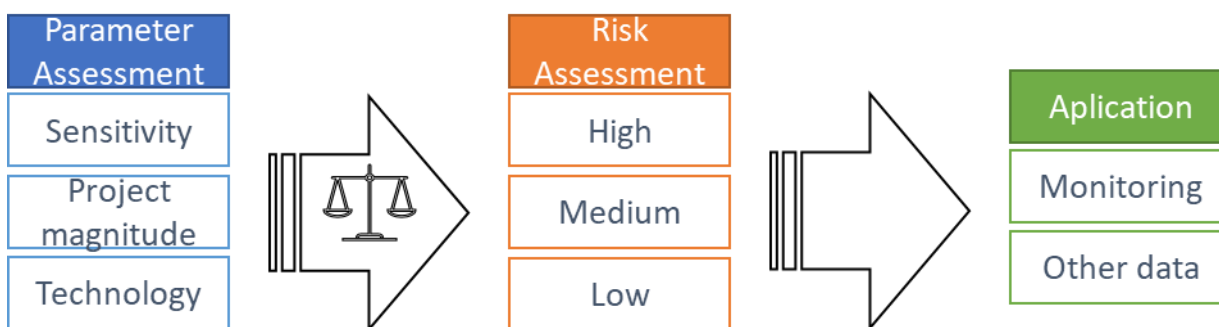


Figure 6-4 Survey Deploy Monitor methodology

On the other hand, risk retirement recommends that MRE developers and regulators rely on what is known from already consented projects, from related research studies, or from findings from analogous offshore industries. When larger arrays of MRE devices are planned, or when new information comes to light, these risks can be revisited and new decisions about the level of risk downgrading or retirement can be made (Copping et al., 2020).

The ecological risk-based assessment framework is also operationalized into a free-access web tool WEC-ERA (<https://aztidata.es/wec-era/>) which could guide managers and decision makers in identifying priority aspects of concern considering the environmental complexity in the decision-making and WEC projects consenting process, providing innovative and valuable information for the adoption of measures to avoid or mitigate negative impacts produced by WEC farms (Galparsoro et al., 2021a).

Moreover, the development and implementation of innovative MSP DSTs such as VAPEM tool (Environmental Assessment and Marine Spatial Planning) for site selection of WE project allows to identify and select suitable areas as well as support the decision taken by policy makers and developers during the Strategic Environmental Assessment and Environmental Impact Assessment (Galparsoro et al., 2020).

6.1 Risk based approach in Portugal

In Portugal, a working group was organized in June 2020 to engage Portuguese authorities related with the environmental licensing of MRE projects. The event included representatives of all regulatory authorities involved in the permitting process: DGRM, CCDR-N, CCDR-LVT, ICNF, Directorate General of Cultural Heritage (DGPC), among others. Throughout the project lifetime, contacts were maintained with these authorities, ensuring that the most updated legal diplomas are included in this guidance.

Most projects didn't fit the AIA regime in terms of capacity (the devices' capacities were below the thresholds set out in the RJAIA), nor the AlncA regime that existed at the time. Therefore, CCDR-N explained there was a general uncertainty amongst all entities involved regarding the scope and parameters that should be monitored in the first project. This barrier was however overcome in the second project because of the experience acquired previously.

Authorities believe there is an urgent need for specific legislation in the scope of RJAIA that fits this type of projects, i.e., with a different capacity threshold that complements the already existing 50MW threshold.

CCDR and ICNF believe that any project subject to an AIA or ElncA was to some extent already subject to a risk analysis although they acknowledge the approach might not be the one under discussion. Within the scope of CCDR-LVT, the risk management translates into the assessment of impacts and their significance, i.e., by attributing a magnitude, significance and durability to each risk, a risk analysis is being conducted.

Although the analysis often focuses on a specific environmental factor, the final decision always considers all factors involved allowing for an integrated analysis which is one of the main characteristics of a risk-based approach.

In spite of this risk identification approach, in practice monitoring programs address environmental components for which regulators are more uncertain or which have been less studied by national monitoring programs, such as marine mammals or more recently, non-indigenous species.

According to the Portuguese authorities, some of the principles defended by an adaptive management are already being employed empirically by the authorities that learn from one project to another, increasing their confidence as more projects are being installed and monitored. However, while the authorities consider the deployment of one single device or a prototype of less concern, there is still concerns with projects that include multiple devices, due to knowledge gaps on their cumulative impacts and with other activities already ongoing in the maritime space.

To streamline the permitting process, there has been an attempt to implement a one-stop shop approach in licensing, establishing DGEG as the main point of contact, similarly to what has been done successfully in Scotland. However, in terms of environmental permitting processes, there is still the need to submit each process next to the responsible authority, APA, CCDR or DGRM, depending on the project characteristics and dimension.

Test sites have been suggested as potential enablers of project deployment since they can have a role in data collection and compilation. Ideally, test sites could enable deployment by providing environmental data bases that could streamline both developers and authorities access to data. However, some of data obtained has been funded by developers and is restricted by confidentiality agreements.

6.2 Risk Based approach in Spain

In Spain, a working group was organized in June 2020 with the Spanish regulatory authorities and with other agents involved in the authorization process in Spain (project developers/promoters, policy regulators, consenting and surveying service providers, Environment Impact assessment practitioners, consenting and surveying consultants, energy companies and academic experts, both in science and policy). The main results of this working session contributed to the Public Consultation process of the roadmap of "Spanish Strategy for the development of Offshore Wind and Marine Energy", within the framework of the PNIEC 2021-2030 (described in 4.2. section).

Stakeholders identified that there is a lack of previous studies that provide information on the natural and physical values of the selected sites. Moreover, they admitted that there is an important uncertainty and lack of knowledge regarding the environmental impacts associated with marine energy projects, including synergistic and cumulative effects with other marine facilities or other marine uses. Consequently, there is an excessive cost of the studies necessary to solve this uncertainty. Stakeholders agreed the importance of having a good base of prior environmental knowledge of the project site, and the technical and economic implications associated with the application of a precautionary principle. They concluded that the risk approach could be included to cover previous information in early stages, at Planning stage or during the Strategic Environmental Assessment and also during the competitive competition procedure for a reservation zone, prior to the administrative authorization processing (described in 4.2 section).

After the afore mentioned working group, an interview was carried out in October 2021 with the Area Coordinator of the Subdirectorate General for Environmental Assessment. She admitted that there is a lack of basic knowledge about risk-based approach which extends, in some cases, to an insufficient knowledge of the marine environment. However, she assumed that the development of PSOEMs has been proposed based on the philosophy behind the risk-based approach and the adaptive management. The theoretical concept has been incorporated, but studies for classification and for ordering are lacking. In this sense, there is no place for long-term impact studies.

Then, she agreed that the comments and the suggestions made in the context of WESE during the PSOEMs draft public consultation should be reviewed in the final draft. She agreed with the working group conclusions celebrated in June 2020, including that the adaptive management and the risk-based approach is especially useful in the planning phase and during the request phase for the reservation zone (RD 1028/2007, specially for commercial offshore wind) in which, as it was mentioned before, the incidence of the offshore wind project on the ecosystem must be included. She agreed that it is very difficult, almost impossible, that both approaches could be integrated into the legislative consenting procedure. She suggested that a good practice guide which includes recommendations could be very useful for environmental agents or managers. The integration of both approaches in the consenting procedure should have broad consensus.

Finally, she identified the RD 1028/2007 as a possible bottleneck in authorization procedures: it is expected that, not only the projects already submitted for Environmental Assessment (in process) but also those project that have requested the scope of their impact study will come to converge with the official version of the PSOEMs and the roadmap of "Spanish Strategy for the development of Offshore Wind and Marine Energy". In this sense, the identification of priority areas for marine energy projects in Spain through POEMs (in which the incidence of the project on the ecosystem must be included during the request phase for the zone reservation) and the identification of potential areas for marine energy research and development projects will facilitate the consenting process, promoting for advanced prototypes.

At this point, it is important to mention that the **Provision 10584 of Spanish Official Bulletin (BOE) no. 151 of 2021, 3rd Additional provision** establishes that "*Applications for administrative authorization of facilities submitted under Royal Decree 1028/2007*", for the electricity generation facilities in the Spanish territorial sea:

1. From the entry into force of this royal decree-law, and until the approval of the new regulatory framework for electricity generation facilities in the territorial sea by the Spanish Government, **no new requests for reservation of facilities area will be accepted for offshore energy generation** within the framework of the procedure established in Title II of the Royal Decree 1028/2007.
2. **No new applications for administrative authorization of offshore energy generation facilities will be accepted** within the framework of the procedure established by the Article 32 of Royal Decree 1028/2007.
3. **Those requests for administrative authorization submitted prior to the entry into force of this additional provision will continue to be processed as provided in Royal Decree 1028/2007, of June 20.**

Finally, following the guidelines outlined in the Guide on Marine Spatial Planning of IOC-UNESCO⁸, integrated and adaptive maritime spatial planning "is based on a circular or iterative management process, rather than linear, that allows the information feedback from the past and improve future management. Assessment helps managers to adapt and improve through a 'learning process'. In this sense, among the guiding principles for the preparation of POEMs is the concept of adaptative management: the plans have a monitoring program (section V.3), which

⁸ 5 Ehler, Charles y Fanny Douvère. Planificación espacial marina: una guía paso a paso hacia la Gestión Ecosistémica. Comisión Oceanográfica Intergubernamental y el Programa del Hombre y la Biosfera. COI manuales y guías n° 53. París, UNESCO. 2009 (inglés). 2013 (español)

has been designed to detect the evolution of the different uses and activities human resources in the marine environment, the effectiveness and possible deficiencies in the plan will be identified, thereby facilitating adaptive management and guiding steps towards revision and update of the plans in 2027.

7. Discussion

In order to apply a risk-based approach to the consenting process in the Spanish and Portuguese waters, legal diplomas would have to be further simplified. In the past, projects environmental requirements have been decided depending on local sensitivities and on a case-by-case scenario, what extended the consenting timelines and overburdened developers. However, given the lack of knowledge and of appropriate monitoring programmes ongoing in the marine environment, regulators are not yet confident that environmental concerns can be overcome by the implementation of a risk-based approach and adaptive management.

According to the conclusions from the Portuguese and Spanish workshops, the risk-based approach could be integrated in the early stages of the legal framework in both countries, i.e., at strategic or planning scale (e.g., AAE or MSP). The integration of a risk-based approach in the early stage of the project or in the MSP for site selection of wave energy developments could be a key element in the implementation of this approach in the consenting procedures. The decision support tools that are being developed under WP5 in WESE project fits with this possibility since the risk-based approach is one of the criteria of the suitability analysis of new sites for wave energy projects development (Galparsoro et al., 2021a, 2021b, 2020). It could be expected that the wave energy projects proposed to be developed in the suitable areas identified by these decision support tools of MSP under this risk-based approach will suffer a more straightforward consenting procedure (Apolonia et al., 2021) or at least will bring to the project planning phase with authorities a clear identification of the environmental risks that will likely need to be assessed.

Even though MSP is implemented in both countries, the plans are at different stages of development in the two Member States. In Portugal, the Situation Plan (PSOEM) was published in 2019 (Presidência de Conselho de Ministros, 2020). The plan identifies the areas with potential for offshore renewable energy exploitation in a 10-year perspective, including different renewable energy sources, and considering the oceanographic conditions and the distance to the coast. In terms of space specifically allocated for this purpose, there are currently three areas planned for the deployment of marine renewable energy: an area for pilot projects offshore Viana do Castelo, an offshore area in Aguçadoura, where several wave and wind projects have already been tested (i.e., Pelamis, Windfloat, Hi-Wave5), and an area located off the coast of Peniche, where AW-Energy has previously deployed the WaveRoller technology. The area predicted for pilot tests, off Viana do Castelo, can include technologies such as wave and wind, and has been under the attention of offshore wind developers, for

commercial purposes. Whenever a new polygon area is considered by developers, the current MSP needs to be altered by public or private initiative and several barriers arise, since the novel allocation of space needs to be approved at government level, what leads to an incremented legal complexity of the process. The installation of a project outside these areas will require the preparation and the submission of a Contract Proposal that must be approved by the Portuguese government (the Ministry of the Sea), followed by the preparation of an Allocation Plan. In Portugal, the areas dedicated to the implementation of renewable energy projects in the PSOEM appear to fall short for the number of requests submitted by developers. In addition, the polygons currently designated are destined for pilot projects and therefore the designation of specific areas for commercial projects has been lacking, especially in what concerns offshore wind projects, that are in demand of wider areas. The PSOEM has been subject to a SEA, however any new project installation will have to be scoped in terms of environmental assessment requirements. If changed, the PSOEM will also be subject to a new SEA.

In Spain there are synergies between the Roadmap for the Development of Offshore Wind and Marine Energies in Spain and the 2021-2030 PNIEC. Among them, both documents include measures for the adequacy, adaptation, or review of the current administrative procedure, considering the characteristics of the project (Measure 3.4 Adequacy of the administrative framework, in the Roadmap; and Measure 1.18 Review and simplification of administrative procedures, in the PNIEC). In this sense, the review of specific authorization procedures for experimental projects (pre-commercial) and prototypes tests (with a duration of two or three years), the authorization process must be agile when those prototypes must be replaced. In addition, Article 16 of the 2018 Renewable Energies Directive provides that the developer or promoter is not required to contact more than one control point for the entire permit granting procedure, facilitating the reduction of deadlines during the instruction.

Moreover, the PSOEMs will publish definitive polygons for priority uses (ensuring that such uses of general interest imply a priority character) and for high potential uses (in which it is also necessary to have identified the more suitable space for its development) in a Royal Decree, which means that those polygons will be binding. For both type of uses (priority and high potential), specific polygons for offshore wind energy have been identified. The activities related to experimentation of infrastructures or precommercial projects for wind and other marine energy have been preferably identified in the priority and high potential use areas of R + D + I, with no specific polygons for marine energies projects which is the case of offshore wind energy. Nowadays, the criteria of

POEMs are not an exclusive planning of specific maritime uses, this is, the PSOEMs are designed for multiple uses facilitating and making multiple uses compatible, identifying the priority and high potential areas. However, public uses are priority over the private.

Continuing with Spanish consenting process, in the specific case of offshore wind, in 2007 a mesh of 73 offshore wind areas was defined together with a Strategic Environmental Study of the Spanish Coast, establishing a classification of suitable and exclusion areas for zone reservation requests by promoters of offshore wind farms of more than 50 MW. The regulatory framework in force establishes that once the request for a zone reservation is made, the procedure to characterize the affected offshore wind area or areas is compiled in a single document, as well as the estimate of the maximum generation assessable to the electrical transport networks and the impact of the offshore wind project on the ecosystem elements of the affected area. From the publication of the area characterization in the BOE, the concurrence procedure is opened, in which the interested parties could present the corresponding guarantees and a premium offer, which would be resolved by a Valuation Committee created for this purpose.

The resolution of the concurrency procedure grants the right of access to the transport network by the power assigned in said resolution and the reservation of the area that, once the corresponding title of occupation of the maritime-terrestrial public domain has been obtained (described in section 6.2.2), allows the successful tenderer to carry out, exclusively, the research operations of the wind resource in the corresponding area for 2 years -extendable for an additional year- and, subsequently, the construction and operation of the installation once the mandatory authorizations have been obtained.

In this sense, as a conclusion, PSOEMs will facilitate the identification of suitable areas, in which previous characterization was made for the potential and compatible uses. However, it is important to mention that this previous area characterization do not exclude the corresponding environmental assessment during the consenting process, but would facilitate it, providing certainty and consistent. Summarizing, the beginning of this consenting process must be conditioned to the fulfilment of the spatial definition in the PSOEMs which minimizes the environmental impact and maximizes compatibility with other uses and activities, granting rights over the use of space, the reservation of access and connection to the electricity system (measure 3.2 from the Roadmap for the Development of Offshore Wind and Marine Energies in Spain).

8. Final Remarks

8.1 Portugal

- The processes of attribution of areas for renewable energy purposes that are not designated in the Plan is largely bureaucratic involving a higher number of governmental authorities. As such, an update of the plan should establish new areas or increment the existing ones.
- With regards to the electrical permit, the existing legislation ruling the electrical system does not provide proper legal framework for demonstration projects, requiring the promotor to follow similar procedures as required for commercial ones. The Portuguese Government has recently made a comprehensive revision of this legislation, with a draft version already in public consultation. Among other relevant alterations, this revision introduces a special Technological Free Zone (ZLT) (offshore of Viana do Castelo), which largely simplifies the permitting procedure for demonstration projects.
- There has been a significant delay in the authorization to reserve grid capacity for new projects in the onshore grids which has hindered the access to electrical permits and therefore the deployment of additional offshore projects or parks (i.e., applicable to offshore wind). The identification of existing constrains in what regards electrical permitting is of utmost importance for the development of the sector.
- In terms of electrical permitting, there is no reserve capacity available; however, it is currently under the revision of the government a legal diploma to attribute annual grid capacity quotas specific for demonstration projects, minimizing the consultations of external entities, and eliminating fees and deposits, guarantee a fast-forward access to the permit and consequent grid connection.

8.2 Spain

- In Spain, the administrative procedure in force for the authorization of marine renewable energy plans and projects is based on 4 main legal instruments:
 1. Royal Decree 1028/2007 (administrative procedure for electricity generation facilities in territorial waters)
 2. Law 2/2013 (legal framework for the occupation of the territorial sea)
 3. Law 21/2013 (administrative procedure for Environmental Impact Assessment)
 4. Royal Decree 79/2019 (regulatory framework that includes criteria for compatibility with marine strategies).
- The development of PSOEMs (official publication pending, scheduled for 2022) requires a review of the authorization or concession procedures for the allocation or reservation of areas for the development of activities in the Spanish marine space, especially for the authorization of electricity generation facilities in the territorial sea through Royal Decree 1028/2007, which was identified as a bottleneck rather than the administrative procedure for Environmental Impact Assessment (with the shortest period of time for achieving its approval considering the entire consenting process).
- The Spanish regulatory authorities and other agents involved in the consenting process for the environmental approval of renewable marine energies identified a high number of authorities involved in the process. In this sense, some European countries developed a "one-stop shop" approach, where a single authority is responsible for licensing, with the aim of accelerating the consenting process for developers.
- The Spanish regulatory authorities agreed that adaptive risk-based management could be implemented in the early stages of environmental processing, on a more strategic and planning scale, such as during the request phase for the zone reservation, within the framework of the PSOEMs. They confirmed that it could not be integrated into the legislative consenting procedure. However, they agreed that it is a useful tool for environmental agents or managers for the improvement of the decision-making by reducing the uncertainty associated with the environmental impacts of these technologies.

9. References

- Apolonia, M., Cruz, E., Simas, T., Menchaca, I., Uyarra, M.C., Bald, J., 2021. Deliverable 4.3 Feasibility for the implementation of wave energy licensing based on a risk-based approach and adaptive management in Spain and Portugal. (Report of the WESE Project funded by the European Commission. Agreement number EASME/EMFF/2017/1.2.1.1/02/SI2.787640.).
- Bald, J., Menchaca, I., Bennet, F., Davies, I., Smith, P., O'Hagan, A.E.M., Culloch, R., Simas, T., Mascarenhas, P., 2015. Review of the state of the art and future direction of the Survey, Deploy and Monitor policy.
- Copping, A., Freeman, M., Gorton, A., Hemery, L., 2020. OES-Environmental 2020 State of the Science Report: Chapter 13 17.
- Galparsoro, I., Korta, M., Subirana, I., Borja, Á., Menchaca, I., Solaun, O., Muxika, I., Iglesias, G., Bald, J., 2021a. A new framework and tool for ecological risk assessment of wave energy converters projects. *Renewable and Sustainable Energy Reviews* 151, 111539. <https://doi.org/10.1016/j.rser.2021.111539>
- Galparsoro, I., Maldonado, A.D., Borja, A., Bald, J., 2020. Development and implementation of a decision support tool for wave energy development in the context of maritime spatial planning (Corporate deliverable of the Wave Energy in Southern Europe (WESE) No. Deliverable 5.2), Agreement number EASME/EMFF/2017/1.2.1.1/02/SI2.787640.
- Galparsoro, I., Mandiola, G., Maldonado, A.D., Pouso, S., de Santiago, I., Garnier, R., Bald, J., 2021b. Creation of suitability maps for wave energy projects in the context of Maritime Spatial Planning (Corporate deliverable of the Wave Energy in Southern Europe (WESE) Project funded by the European Commission. No. Deliverable 5.3), Agreement number EASME/EMFF/2017/1.2.1.1/02/SI2.787640.
- Jesus, J., Almodovar, M., Simas, T., 2016. Guia de licenciamento de projetos de energia renovável marinha em Portugal Continental., Publicações WavEC, Centro de Energia Offshore. Lisboa.
- Lièvre, C.L., O'Hagan, A.M., Culloch, R., Bennet, F., Broadbent, I., 2016. Legal feasibility of implementing a risk-based approach to MRE consenting and compatibility with Natura 2000 network. (No. Deliverables 2.3 & 2.4), RICORE Project. RiCORE Project.

Presidência de Conselho de Ministros, 2020. Resolução do Conselho de Ministros n.º 203-A/2019.



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